Academic Program Review

ACADEMIC YEAR	2012-2013	☐ Basic Skills ☒ Transfer ☒ Career Technical Education (CTE)
PROGRAM	Agriculture Science and Agriculture Business Management	
DEPARTMENT	Science, Math, and Engineering	
DIVISION	Health and Sciences	
SUBMITTER	Daniel Gilison	

I. INSTITUTIONAL GOALS

INSTITUTIONAL GOAL **1**	**INSTITUTIONAL MISSION AND EFFECTIVENESS** – The College will maintain programs and services that focus on the mission of the College supported by data-driven assessments to measure student learning and student success.
INSTITUTIONAL GOAL **2**	**STUDENT LEARNING PROGRAMS AND SERVICES** – The College will maintain instructional programs and services which support student success and the attainment of student educational goals.
INSTITUTIONAL GOAL **3**	**RESOURCES** – The College will develop and manage human, technological, physical, and financial resources to effectively support the College mission and the campus learning environment.
INSTITUTIONAL GOAL **4**	**LEADERSHIP AND GOVERNANCE** – The Board of Trustees and the Superintendent/President will establish policies that assure the quality, integrity, and effectiveness of student learning programs and services, and the financial stability of the institution.

II. PROGRAM GOALS

A. PAST – EVALUATION OF PREVIOUS CYCLE OBJECTIVES/PROGRAM GOALS (SET IN PREVIOUS YEAR)

List your previous objectives/goals and associated Institutional Goals. All program goals must address at least one of the institutional goals.

PAST PROGRAM GOALS (Describe past program goals.)	INSTITUTIONAL GOAL(S) (Check all that apply.)

1	PAST PROGRAM GOAL #1	INSTITUTIONAL GOAL(S)
	Identify Program Goal from Last Program Review: The program needs to procure a 400 acre site on which permanent dedicated facilities of crop, pasture and orchard land as well as greenhouse, shade house, classroom, mechanized shop and livestock management buildings can be erected.	☐ 1 ☒ 2 ☒ 3 ☐ 4
	☐ Met ☐ Partially Met ☒ Not Met **Provide detail on any improvements/effectiveness and detail status on those not fully met:** We are still in the process of examining how much land can be procured for Agriculture and where the land would be. This does not have a definitive timeline due to the cost and availability of suitable land.	

2	PAST PROGRAM GOAL #2	INSTITUTIONAL GOAL(S)
	Identify Program Goal from Last Program Review: Changing the course-offering pattern of agriculture classes to allow students to go through the program quicker, and more successfully.	☐ 1 ☒ 2 ☐ 3 ☐ 4
	☐ Met ☒ Partially Met ☐ Not Met **Provide detail on any improvements/effectiveness and detail status on those not fully met:** Some agriculture courses are being offered as short-term classes that meet for 8 weeks. This allows students to take more agriculture classes per semester, although an analysis of student success due to the shortened timeframe of these classes has not yet been performed.	

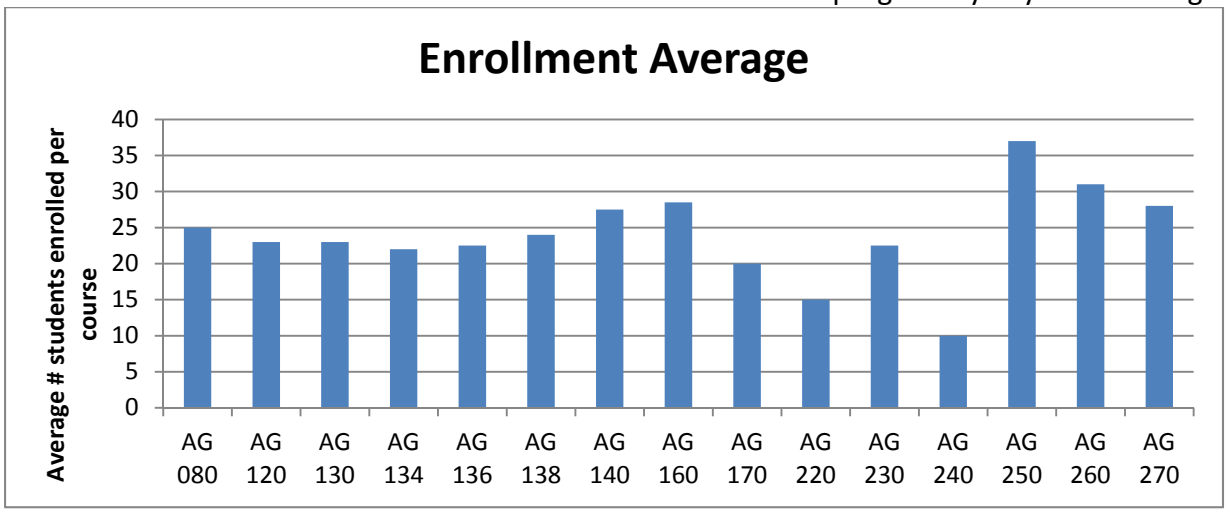
3	PAST PROGRAM GOAL #3	INSTITUTIONAL GOAL(S)
	Identify Program Goal from Last Program Review: Offer more agriculture classes during the day.	☐ 1 ☒ 2 ☐ 3 ☐ 4
	☐ Met ☒ Partially Met ☐ Not Met **Provide detail on any improvements/effectiveness and detail status on those not fully met:** As above, by offering short-term classes, we have increased somewhat the number of agriculture classes offered during the day, but would most likely need to hire a part-time faculty member who could teach day classes, as all of the current part-time faculty teach only at night.	

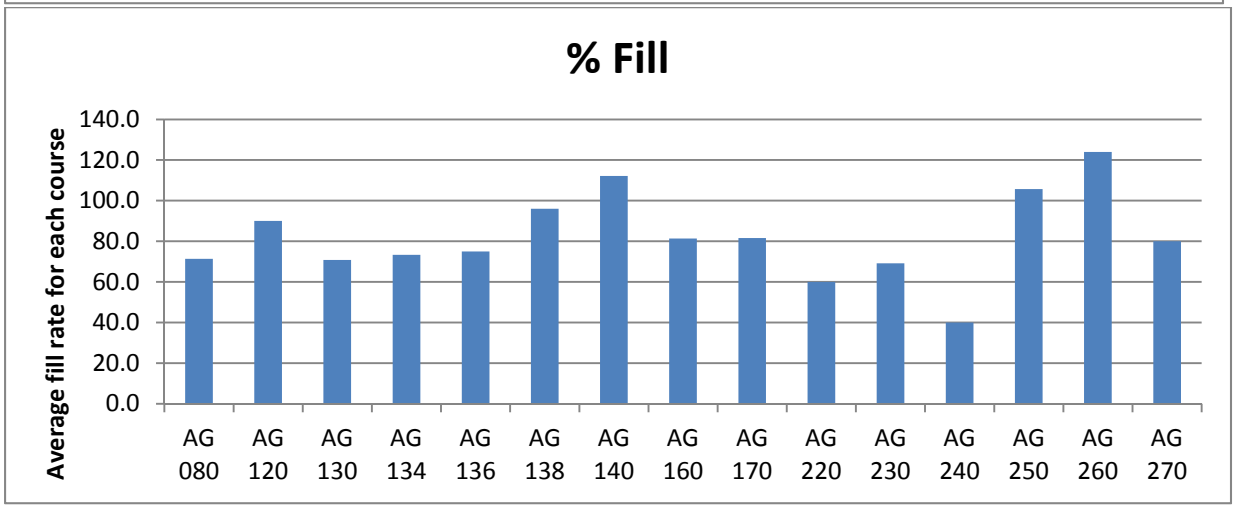
Comments:

B. PRESENT – DATA ANALYSIS AND PROGRAM HEALTH

1. Summarize and analyze all disaggregated data by day, evening, gender, ethnicity, and distance education regarding enrollments, fill rates, productivity, completion, success, retention, persistence, and transfer (complete a, b, & c). ***Attach graphs or trend data***.

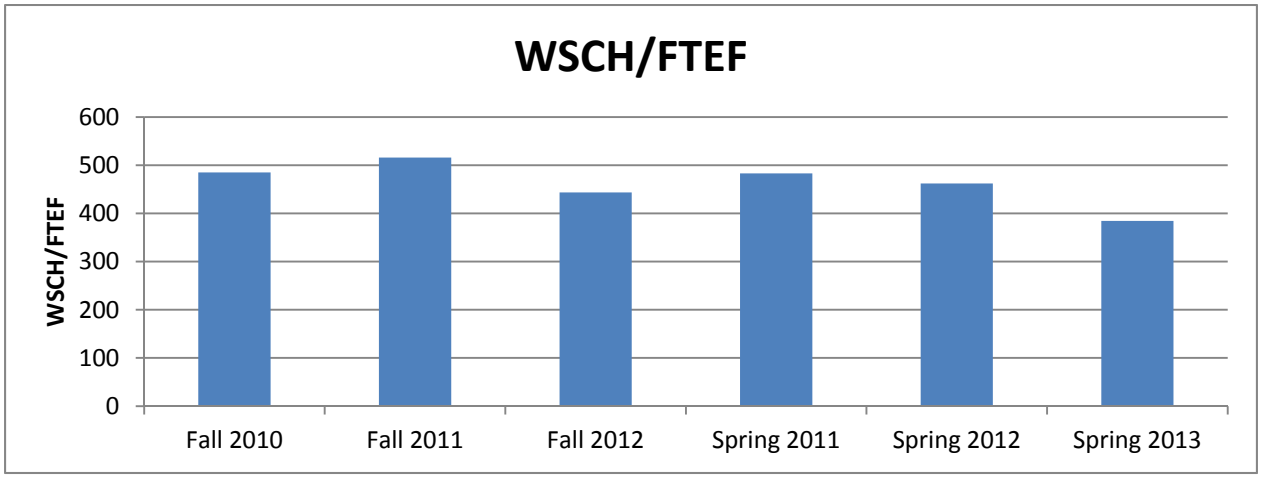
   a. Discuss and chart the trends in enrollment and fill rate for each program by day and evening at the program level.





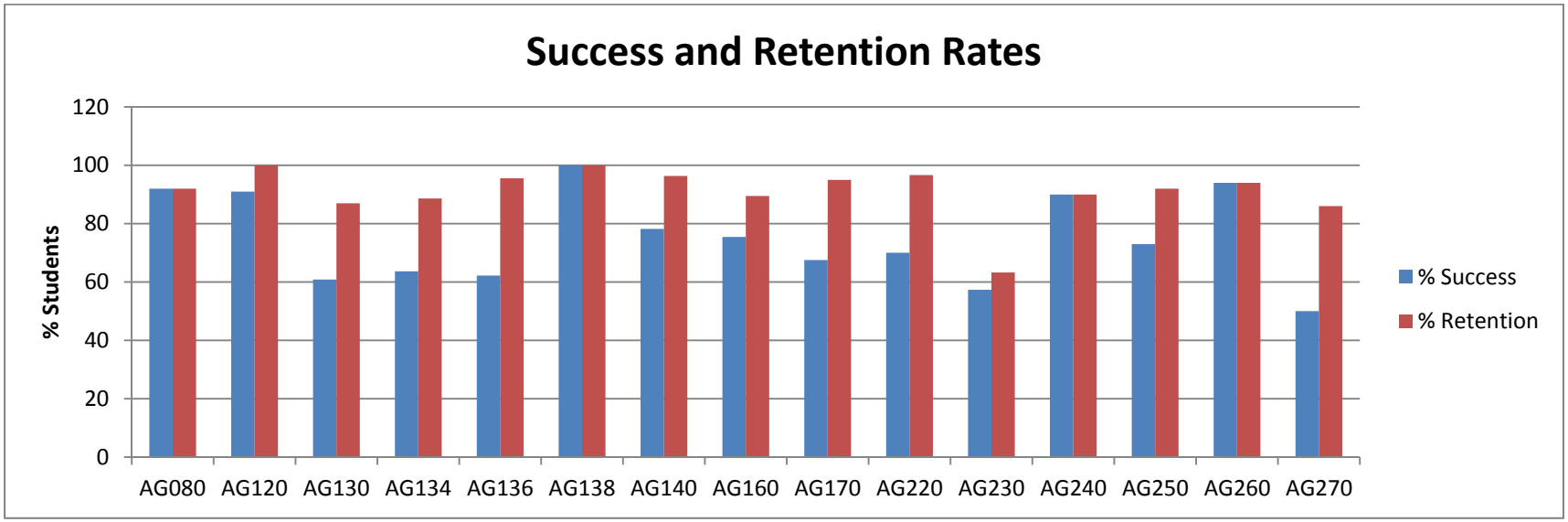
Day and night data is not provided here per course in both of the agriculture programs as these courses are only offered once every 2 years, on average, and offered only when instructors are available to teach them. Therefore, to compare day vs. night sections would not provide any meaningful data. Most agriculture courses have a fill rate of anywhere between 60-90% fill. While this is sufficient for classes to be held, the program should look at ways to increase the fill rate. AG 240 only had a 40% fill rate, but was allowed to be taught, as it is a capstone class for the program.

b. What are the trends in productivity? (WSCH/FTEF) The goal is 525 as per state guidelines. A low number means that we are below target levels for productivity. For example, in a small class that has a mandated cap of 15 students, the fill rate may be 100% but the productivity number (WSCH/FTEF) will be very low. A class with a cap of 40 students with a 100% fill rate will have a productivity number close to or above 525.



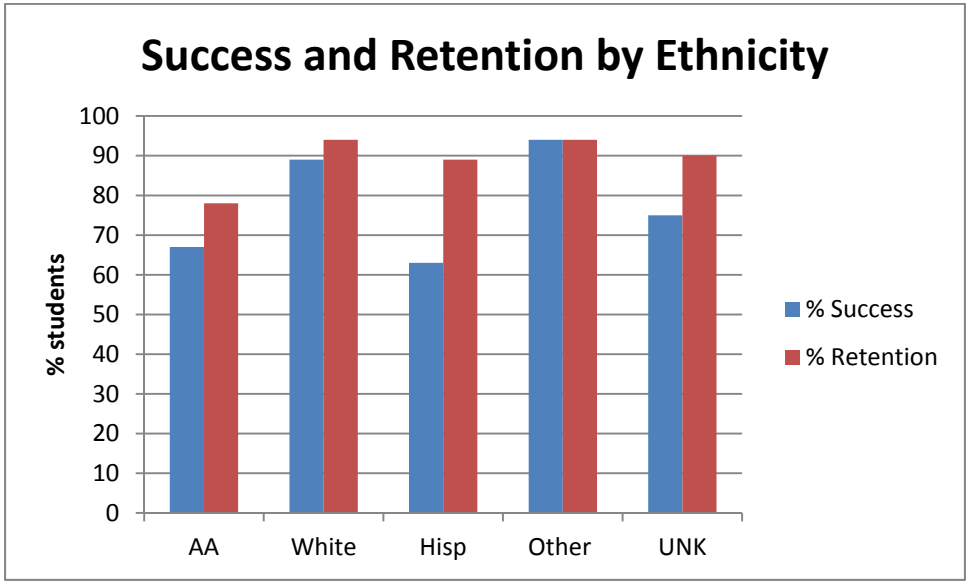
The average WSCH/FTEF in Agriculture is 462, which is below the goal of 525. This average number is not accurate, however, for two reasons: 1) the data given did not take into account that AG 110 and ENVS 110 are the same course, and those data should be combined, increasing the WSCH/FTEF, 2) AG/ENVS 110 is not a course that can be used in either the Agriculture Science or Agriculture Business Management programs, and should have not been included in this data set. This would decrease the WSCH/FTEF value because the AG/ENVS 110 is the most common course offered by faculty in this program, and typically has a high fill and retention rate, whereas the fill rates for agriculture classes required for either program have a lower fill rate (see the chart in part a). Also, WSCH/FTEF have been declining from fall 2011 to spring 2013, going from slightly over 500 to below 400. These classes have caps of anywhere between 25 and 35 students.

c. Discuss and chart the success and retention rates by day, evening (extended day), and online classes in each program and identify gaps.



As stated above, I cannot discuss day vs. night, so I just compared success and retention among all of the courses in the two agriculture programs. This shows that the retention rate for agriculture classes is quite high, typically between 90-100%. Success rates for most classes range between 60-90%. This data shows that students are sticking with these courses, and successfully completing them.

d. Discuss and chart the success and retention rates in each program and identify gaps for five ethnic groups. (African-American, White, all Hispanics, Other, Unknown).



By ethnicity, retention rates range between 78-94%, and success rates range between 63-94%. It is difficult to make any meaningful analysis in the African-American and Other populations, as they contain very small numbers (9 and 17 students, respectively). Overall, it does not appear that Hispanic students perform as well as White or Unknown students in agriculture classes, although this data is skewed towards students in the AG/ENVS 110 classes, which dominate most of the data. Therefore, I cannot tell how well students are performing in the classes needed for the two agriculture programs.

e. Discuss the trends in the number of degrees or certificates awarded, if applicable. (You may be able to expand more about this in B.3 below.)

In the past three years, 1 degree and no certificates were awarded in Agricultural Business Management. This program was recently started up again in 2010, and will take some time to see more students enroll and succeed in the program. In the past three years, 6 degrees in Agricultural Science and 1 certificate in Agricultural Crop Science were awarded.

f. What program changes, if any, will you recommend that you expect would have a positive effect on your students in your program, if applicable?

Offering courses more often than once every two years would help students move through the program quicker. With courses being offered only once every two years, any student who fails or drops a course may become discouraged with having to wait 2 years to repeat the course, and may elect to pursue another major. Also, being able to offer more classes during the day when most students are around, and when outdoor activities are optimal will help to increase student enrollment and success.

2. Summarize revisions, additions, deletions, or alternate delivery methods to courses and/or program based on the last program review.

   Recently, we have been offering some agriculture classes as short-term, 8-week courses. While informal surveys show that students like these this pattern, no significant analysis has been done to show if this has either increased enrollment or student success.

3. Evaluate the program's viability by addressing program completion, size (FTES), projections (growing/stable/declining), and quality of outcomes. For CTE programs, also include labor market projections, placement, and performance on external testing/exams (i.e. ASE, NABCEP) and industry-recognized credentials, placement, and performance on external testing or exams (NCLEX, ASC, NAP).

   Program completion data may not be as high as it should, especially if students are transferring to a 4-years school without applying for their A.A. degree. FTES is small, ranging between 30.6 and 37.5 per semester. However, this number is mostly students in AG/ENVS 110, which is not a part of either agriculture program, so the actual numbers for the program would be much lower.

   The EDD's Imperial County Projection Highlights report includes the following statements.
   "The Farm industry, which makes up 18 percent of the total employment, will climb to 11,700 by 2018, an increase of 300 new jobs.

   "The top three occupations are Farm Workers and Laborers, Crop, Nursery, and Greenhouse; Retail Salespersons; and Personal and Home Care Aides with median hourly wages ranging from $8.95 to $9.24."

   "Occupations requiring higher education, an associate degree or higher, make up 16 percent of this list. These include Farm, Ranch, and Other Agricultural Managers; General and Operations Managers; Accountants and Auditors… with a median wage ranging from $24.08 to $36.73 per hour." (Source EDD 2008-2018 Imperial County *Projection Highlights)"*

   100% of agriculture crop science and agriculture science students have gone on to procure jobs in their fields.

C. FUTURE – LIST OF "SMART" (SPECIFIC MEASURABLE ATTAINABLE RELEVANT TIME-LIMITED) PROGRAM OBJECTIVES FOR NEXT ACADEMIC YEAR TO ADDRESS PROGRAM IMPROVEMENT, GROWTH, OR UNMET NEEDS/GOALS. ALL PROGRAM GOALS MUST ADDRESS AT LEAST ONE OF THE INSTITUTIONAL GOALS.

FUTURE PROGRAM GOALS (Describe future program goals. List in order of budget priority.)	INSTITUTIONAL GOAL(S) (Check all that apply.)

1	FUTURE PROGRAM GOAL #1 Budget Priority #1	INSTITUTIONAL GOAL(S)
Identify Goal: Increase the number of students in agriculture programs.		☒ 1 ☒ 2 ☒ 3 ☐ 4
Objective: 1) Increase the number of sections offered during the day, and decrease the number offered at night. 2) Update curriculum to be in compliance with the state's Transfer Model Curriculum		
Task(s): 1) Hire additional part-time faculty who are able to teach a variety of agriculture classes during the day. 2) Faculty with assistance of Advisory Committee members to review and update all curriculum in both Agriculture programs.		
Timeline: 1) Should be able to accomplish within a 3 year timeframe. 2) Complete by August 20, 2014.		

EXPENSE TYPE	FUNDING TYPE		RESOURCE PLAN (Check all that apply.)	BUDGET REQUEST
☐ One-Time ☒ Recurring	☐ Categorical Specify:	☒ General Fund	☐ Facilities ☐ Marketing ☐ Technology ☐ Professional Development ☒ Staffing	$20,000

2	FUTURE PROGRAM GOAL #2 Budget Priority #2	INSTITUTIONAL GOAL(S)
Identify Goal: Improve facilities for teaching agriculture classes.		☐ 1 ☒ 2 ☒ 3 ☐ 4
Objective: Increase the opportunities for experiential learning related to crop maintenance, conservation, and farm operations		
2.1 **Task(s):** Purchase and erect on-campus greenhouse(s) for experiential learning for Ag & Botany/Biology students **($26,000 for Gable 7500 Series 30'x60').** Identify funding source(s) for purchase and maintenance of greenhouse(s) 2.2 Develop plan to convert existing on-campus acreage into 3 mini-plots capable of growing/farming orchard and crops with separate irrigation systems. **($12,000 for three 5.4 acre 2.0 Hectare – Field Crop DripKit System)** 2.3 Identify potential local, but off-campus land sites dedicated to Ag Program including expanding toward animal husbandry and mechanized shop. **($2,400,000 for 400 acres @ 6,000/acre)** 2.4 Identify funding source to purchase or lease/purchase off-campus site		
Timeline: 2.1 Complete by Dec 1, 2014 2.2 Complete by June 1, 2015 2.3 Goal of June 1, 2020		

EXPENSE TYPE	FUNDING TYPE		RESOURCE PLAN (Check all that apply.)	BUDGET REQUEST
☒ One-Time ☐ Recurring	☒ Categorical Specify: Agricultural proceeds	☒ General Fund	☒ Facilities ☐ Marketing ☐ Technology ☐ Professional Development ☐ Staffing	$2,500,000

3	FUTURE PROGRAM GOAL #3 Budget Priority #3	INSTITUTIONAL GOAL(S)
Identify Goal: Procure district funding for the program.		☐ 1 ☐ 2 ☒ 3 ☐ 4
Objective: Have the district fund the agriculture program, instead of it having to rely primarily on proceeds generated from sale of crops produced.		
Task(s): 1) Determine how much money from the district would be needed to support the program. 2) Meet with the Business office to determine if that amount of money could be allocated to the agriculture programs. 3) Allocate proceeds funds for other, non-essential costs of the agriculture program.		
Timeline: This could be done within a 2 year time period.		

EXPENSE TYPE	FUNDING TYPE		RESOURCE PLAN (Check all that apply.)	BUDGET REQUEST
☐ One-Time ☒ Recurring	☐ Categorical Specify:	☒ General Fund	☐ Facilities ☐ Marketing ☐ Technology ☐ Professional Development ☐ Staffing	$50,000

TOTAL BUDGET REQUEST	$2,570,000

1. How will your enhanced budget request improve student success?

These budget requests will allow students to have better access to facilities that can be used to increase the education of agriculture students, as well as offering classes at times that are more suitable for students to take the classes, and for students to be able to perform outdoor activities (an essential part of agriculture classes).

Comments: Some of the work, especially on future goal #2 has been in progress to procure a plot of land off-campus that is 20 acres in size. Attached below is the estimated costs to maintain crops on this land, and the income that would be generated off of that land.

ORGANIC ALFALFA PROFORMA	FYE 2015	FYE 2016	FYE 2017	FYE 2018
Start Up Cost Off-Set by Self-Fund Acct				
Pre-plant tractor work	$ 4,030.00			
Harvest work x 1/4	$ 1,446.00			
Crop Maintenance	$ 16,100.00			
Miscellaneous x 1/4	$ 1,025.00			
	$ 22,601.00			
Sales Income				
Sales (8 Ton/acre yr. 1 & 2)	$ 40,000.00	$ 40,000.00	$ 35,000.00	$ 30,000.00
Total Income	**$ 40,000.00**	**$ 40,000.00**	**$ 35,000.00**	**$ 30,000.00**
Expense Share Cropping				
As % of Sales	$ 4,208.98	$ 6,018.66	$ 5,266.33	$ 4,513.99
Actual cost of share cropping	$ 208.98	$ 2,018.66	$ 1,266.33	$ 513.99
Land Operation Expense				
Rent 20 acres organic certified land	$ 4,000.00	$ 4,000.00	$ 4,000.00	$ 4,000.00
Crop Maintenance				
Irrigation	$ 2,700.00	$ 2,700.00	$ 2,700.00	$ 2,700.00
Fertilizer	$ 11,000.00	$ 6,000.00	$ 6,000.00	$ 6,000.00
Seed	$ 2,400.00	$ -	$ -	$ -
Miscellaneous				
Fuel	$ 500.00	$ 500.00	$ 500.00	$ 500.00
Other				
Student Worker ($10/h x 10m)	$ 3,600.00	$ 3,600.00	$ 3,600.00	$ 3,600.00
Harvest				
Cut	$ 1,800.00	$ 1,800.00	$ 1,800.00	$ 1,800.00
Rake	$ 1,040.00	$ 1,040.00	$ 1,040.00	$ 1,040.00
Bale	$ 2,048.00	$ 2,048.00	$ 2,048.00	$ 2,048.00
Haul	$ 896.00	$ 896.00	$ 896.00	$ 896.00
Pre-plant tractor work				
subsoil	$ 1,620.00	$ -	$ -	$ -
stubble disk	$ 800.00	$ -	$ -	$ -
finish disk	$ 600.00	$ -	$ -	$ -
triplane	$ 440.00	$ -	$ -	$ -
borders	$ 570.00	$ -	$ -	$ -
Pest Mgmt	$ 4,000.00	$ 4,000.00	$ 4,000.00	$ 4,000.00
Subtotal Expense	$ 38,014.00	$ 26,584.00	$ 26,584.00	$ 26,584.00
Total Expense (with share crop costs)	**$ 38,222.98**	**$ 28,602.66**	**$ 27,850.33**	**$ 27,097.99**
NET INCOME	**$ 1,777.02**	**$ 11,397.34**	**$ 7,149.67**	**$ 2,902.01**

Est. income with self-funded start-up	$ 24,378.02			
~Self-funded account balance	*$ 64,000.00*			
~Self-funded annual expenses from campus farm	*$ 15,000.00*			
~available for Organic Project	*$ 49,000.00*			

III. INSTITUTIONAL STUDENT LEARNING OUTCOMES (ISLOs)

ISLO 1	COMMUNICATION SKILLS
ISLO 2	CRITICAL THINKING SKILLS
ISLO 3	PERSONAL RESPONSIBILITY
ISLO 4	INFORMATION LITERACY
ISLO 5	GLOBAL AWARENESS

IV. PROGRAM LEARNING OUTCOMES (PLOs)

PROGRAM LEARNING OUTCOMES (Describe learning outcomes.)	**ISLO(S)** [Link PLO to appropriate ISLO(s).]

PLO 1	**PROGRAM LEARNING OUTCOME #1**	**ISLO(S)**
	Identify Program Outcome: Ag Business: Demonstrate understanding of market trends and influential factors, display critical thinking skills related to production and marketing development, data interpretation as applied to the decision making process related to commercial production and commodity sales. Ag Crop Science: Demonstrate an understanding of fundamental concepts and knowledge related to the selection, propagation and management of various plant commodities produced for food, feed and fiber.	☐ ISLO 1 ☒ ISLO 2 ☐ ISLO 3 ☐ ISLO 4 ☒ ISLO 5

	Measurable Outcome Summary: Ag Business - Students researched and prepared a presentation on the initiation or expansion of an agriculture enterprise. This was to include potential markets for expansion or need satisfaction. Satisfactory uses of print and electronic resources were demonstrated by all participants. Students identified resources to aid in feasibility study and evaluation of projected business likelihood of success. Ag Crop Science - Students researched and prepared a presentation on alternative potential markets for plant species that are currently known as "weeds". Satisfactory uses of print and electronic resources were demonstrated by all participants.	
	☒ Met ☐ Partially Met ☐ Not Met **Provide detail on any improvements/effectiveness and detail status on those not fully met:** Students were successful in these PLOs.	

PLO 2	**PROGRAM LEARNING OUTCOME #2**	**ISLO(S)**
	Identify Program Outcome: Ag Business and Ag Science: Display competency with respect to the use of standard lab, industry equipment and techniques used in production.	☒ ISLO 1 ☐ ISLO 2 ☐ ISLO 3 ☒ ISLO 4 ☒ ISLO 5
	Measurable Outcome Summary: Faculty observation of student actively conducting machinery operation procedures in controlled system. Students observed correct protocol for machine/implement operation and then duplicated the process.	
	☒ Met ☐ Partially Met ☐ Not Met **Provide detail on any improvements/effectiveness and detail status on those not fully met:** Students were successful in this PLO.	

PLO 3	PROGRAM LEARNING OUTCOME #3	ISLO(S)
	Identify Program Outcome: Ag Business and Ag Science: Demonstrate understanding of scientific research and critical thinking skills related to hypothesis development and data interpretation as applied to the decision making process for commercial production.	☒ ISLO 1 ☒ ISLO 2 ☐ ISLO 3 ☐ ISLO 4 ☐ ISLO 5
	Measurable Outcome Summary: Not yet assessed.	
	☐ Met ☐ Partially Met ☒ Not Met **Provide detail on any improvements/effectiveness and detail status on those not fully met:** Still needs to be assessed.	

***** ATTACH PLO/SLO GRID *****

Course	# Credits	# SLOs Identified	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Spring 2013
AG080	1	1		1				
AG120	3	3			1,2,3			
AG130	3	3					1,2,3	
AG134	3	3		1,2,3				
AG136	3	3				1,2,3		1,2,3
AG138	3	3			1,2,3			
AG140	4	4					1,2,3,4	
AG160	3	3					1,2,3	
AG170	3	3				1,2,3		
AG220	3	3				1,2,3		
AG230	3	3		1,2,3				
AG240	4	4					1,2,3,4	
AG250	3	3		1,2,3				
AG260	3	3			1,2,3			
AG270	3	3				1,2,3		
				Course not offered				

Program	# PLOs	Spring 2012	Fall 2012	Spring 2013
AG	3	1,2		
AG Bus	3	1,2		